

1971 ANNUAL CONFERENCE

NEW ZEALAND

AUCKLAND — March 1st-4th

WELLINGTON - March 4th-6th

DUNEDIN — March 6th-9th

PROGRAMME and REGISTRATION

THE AUSTRALASIAN INSTITUTE OF MINING AND METALLURGY

Telephone: 347 3166

Telegrams: Ausimamet, Melbourne

Clunies Ross House, 191 Royal Parade, Parkville, Vic., Aust. 3052



1971 ANNUAL CONFERENCE

INVITATION

As announced in The Institute Bulletin, the 1971 Annual Conference of The Aus.I.M.M. will be held in New Zealand commencing with a Pre-Conference Social Function in Auckland on Sunday, February 28th, transferring to Wellington on Thursday, March 4th,

to Dunedin on Saturday, March 6th, concluding at Dunedin on Tuesday, March 9th.

The 1971 President of The Institute, Professor E. A. Rudd, and the Chairman of the New Zealand Branch, Dr. John Rogers, extend a cordial invitation to members, ladies and visitors to participate.

GENERAL PROGRAMME

Conference Enquiry Office — Inter-Continental Hotel, Cnr. Princes Street and Waterloo Quadrant, Auckland (Telephone — 74 770).

Conference Enquiry Office opens for collection of badges, etc.

Pre-Conference Tour — Rotorus (Limited — 120) — \$21.
A visit to the Te Aroha Racing Club is included in this tour.

Conference Enquiry Office opens for collection of badges, etc.

Harbour Cruise.

by D. R. Buist.

Inter-Continental Hotel — Ballroom:

G.C.M.G., K.C.V.O., C.B.E.

G.C.M.G., K.C.V.O., C.B.E.

Morning Tea.

Keynote Address: (Speaker to be announced.)

Minerals for Agriculture Symposium. "Mining and Handling of Nauru Phosphate Rock", by Nauru Phosphate Corporation. "Acidulation of Christmas 'A' Phosphate", by N.Z. Fertiliser Manufacturers' "Acidulation of Christmas 'A' Phosphate', by N.Z. Fertiliser Manufacturers' "Acidulation of Christmas 'B' Phosphate', by N.Z. Fertiliser Manufacturers', "Acidulation of Christmas 'A' Phosphate', by N.Z. Fertiliser Manufacturers', "Acidulation of Christmas 'A' Phosphate', by N.Z. Fertiliser Manufacturers', "A' Phosphate 'A' Phosphate', by N.Z. Fertiliser Manufacturers', "A' Phosphate', "A'

Research Association (Inc.). "Development of Wash/Screen Process to Beneficiate Christmas Island 'B' Grade Phosphates", by J. S. Hoare.

OR

OR

Technical Sessions.

"Wickel-Iron Exchange in Pyrrhotite", by W. E. Ewers.
"Vertical Zoning of Gold-Silver-Tellurides in the Emperor Gold Mine, Fiji", by D. L. Forsythe.
"The Exploration and Proposed Development of the Taharoa Iron Sand Deposit", "The Exploration and Proposed Development of the Taharoa Iron Sand Deposit",

VOCKEVAD

Saturday, February 27 9.00 a.m.c 5.00 p.m.

Sunday, February 28 10.00 a.m.- 5.30 p.m. 6.00 p.m.-10.00 p.m.

Monday, March 1 10.00 a.m.

Morning

Lunch at Hotels.

Afternoon

Minerals for Agriculture Symposium:

"The Aluminium-Iron Phosphate Overburden of Christmas Island—its Mineralogy, Mineral Chemistry and Thermal Transformations", by N. A. Trueman.

"Production of Water Soluble Phosphate Fertiliser from Christmas Island 'C' Grade Phosphate", by R. J. Allen.

"Production of Fertilisers and Smelter-Grade Alumina by Alkali Leaching of Christmas Island 'B' and 'C' Phosphate Ores", by Dr. H. P. Rothbaum, OR

Technical Sessions:

"Biogeochemical Prospecting in New Zealand", by M. H. Timperley.

"Some Experience with Geochemical Prospecting in New Zealand", by P. Riley and J. C. Braithwaite.

"A Hydrometallurgical Scheme for New Zealand Sulphide Ores", by G. J. Tegg and E. G. Kelly.

Afternoon Tea.

Minerals for Agriculture Symposium:

"Discovery, Exploration and Feasibility Studies of the Development of Phosphate Deposits in Queensland", Broken Hill South Ltd.

"Assessment of Chatham Rise Phosphorite", Dept. of Mineral Technology, University of Otago and N.Z. Fertiliser Manufacturers' Research Association (Inc.).

"The Lake Rotokaua Sulphur Deposit", by G. B. O'Malley. OR

Technical Sessions:

and G. A. Wright. "Kinetics of Impurity Removal from Steel for a Batch Process". by R. D. Andrew

"Steel Melting."

Chairman: Professor E. A. Rudd. Guest Speaker (to be announced). Business Session — Town Hall.

Technical Visits (as set out on page 18).

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Inter-Continental Hotel:

Keynote Address: (Speaker to be announced.)

Morning Tea.

Technical Sessions:

"The Design and Evaluation of Acid Pickling Inhibitors", by T. C. Lukeman. Condenser", by F. R. A. Jorgensen. "The Condensation of Aluminium Chloride Vapour in a, Stirred-bed

Lunch at Hotels.

Afternoon Tea.

Australian Mineral Industries Research Association Limited meeting:

Pregident: Sir Maurice Mawby, C.B.E.

Keynote Address: (Speaker to be announced.)

(By invitation to registered delegates and ladies.) Buffet Dinner at the Inter-Continental Hotel.

.m.q 00.8 -.m.q 0£.0

Afternoon

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Evening

All day Tuesday, March 2

Wednesday, March 3

.m.q 08.8

WELLINGTON Thursday, March 4 9.00 a.m.

Afternoon

8.00 p.m.

Friday, March 5 Morning Conference Enquiry Office — Town Hall.

Enquiry Office opens.

Delegates arrive in Wellington.

Visits to D.S.I.R. Divisions.

Golf and Sightseeing Tours.

Dinner at Hotels.

Social Function: Wellington Club, The Terrace. (By invitation to registered delegates and ladies.)

Technical Sessions:

Concert Chamber, Town Hall, Wellington.

"A feasibility study for a Ferro-silicon industry in Southland", by J. M. Hope. -

"Scheelite exploration and development at Glenorchy", by D. H. Bell and C. A. Blance.

"The Exploration for, and the Economic Appraisal of, Asbestos", by B. C. Butt.

Technical Sessions:

Meeting Room — Wellington Library.

"A Study of Results of the VLF-EM Method of Prospecting in Australia and Papua", by W. J. Langron.

"Ground Evaluation of Airborne Spectrometer Data in the Rum Jungle Area, Northern Territory", by W. J. Langron and R. D. Beattie.

"Aerial Infra-Red Photography as a Guide to Mineralization", by Dr. R. R. Brooks.

Morning Tea

Keynote Address (Speaker to be announced): Concert Chamber, Town Hall.

Lunch — Green Room, Town Hall.

Keynote Address (Speaker to be announced): Concert Chamber, Town Hall.

Afternoon Tea.

Financial Forum:

"Taxation of Mining Companies", by P. J. Rowe, LL.M., J.D. (Chicago), Stone, Kurta & Co., Wellington.
"Exchange and Currency Controls and Regulations", by R. W. R. White, A.C.A., A.C.I.S., Deputy Governor, Reserve Bank of New Zealand, Wellington. "Availability of Finance", by H. J. Radford, B.Com., F.C.A., Daysh Renouf & Co., Wellington.

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Technical Sessions:

"Electromagnetic Testing of Mine Winding Ropes — The Field Pattern on an Internal Broken Wire", by Dr. H. E. J. Symes. "Dynamic Shocks in Mine Hoisting Systems", by Professor J. P. Morgan.

Official Dinner.

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By Invitation to registered senior delegates and ladies, attended by the Rt. Hon. The Prime Minister of New Zealand, to be held at the Horticultural Hall and Town Hall, Lower Hutt.

Saturday, March 6	Delegates travel to Dunedin. The Wellington Racing Club meeting at the Trentham Race Course.					
DUNEDIN	Conference, Enquiry Office — University of Otago, Department of Mineral Technology.					
Saturday, March 6 9.00 a.m.	Enquiry Office opens. Delegates arrive Dunedin and confirm registrations.					
Afterñooñ - -	Local Scenic Tours: Short coach tours of Dunedin and environs covering city and University areas and hill suburbs. University of Otago — Open.					
Late Afternoon	University of Otago Official Reception — University Lodge or Union (by invitation only).					

8.30 p.m. Social Function with entertainment at Glenfalloch Lodge and Gardens.

areas — including lunch. Geological and historical tour to Hyde alluvial and Macraes Flat gold-scheelite

of the scenic areas of Central Otago. gold-scheelife underground workings in the Macraes area. This tour covers some Hyde township where gold-bearing deep leads were once worked, and to abandoned Macraes Flat areas will be covered. Visits will be made to alluvial areas near Historical, geological and economic features of the Otago schists in the Hyde and

Barbecue at Long Beach.

ocean swimming and walks. Bardecue lunch and refreshments will be served. Visit to Long Beach via harbour side and Port Chalmers; extensive sand beach,

drive with panoramic views of ocean and harbour. The tour will include a visit to A round trip bus tour of Otago Peninsula via the summit road and the harbour Scenic Tour of Otago Peninsula — including afternoon tea.

of penguins, albatrosses and seals. the Otago University Marine Biological Research laboratories with possible sightings

Otago School of Mines Centennial Function — Otago Golf Club, Balmacewan

(OSM Graduates and invited guests only).

Otago Museum:

Morning Tea. Keynote Address: (Speaker to be announced.)

Technical Sessions: Otago Museum —

Anderson. "The Role of Paleogeography in the Location of Marine Placers", by K. J. :A muirotibuA

M. J. Lawrence. "The Application of BRGM's Alluvial Prospecting Practice in Australia", by

Tour Da Sunday, March 7

9.00 a.m.- 4.30 p.m.

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Evening

Monday, March 8

Morning

Auditorium B:

"Cemented Fill Practice and Research at Mt. Isa", by Dr. E. G. Thomas.

"Grade Control Procedures in a Large Iron Ore Open Pit", by (Hamersley Iron Pty. Ltd.).

Buffet Lunch at University Union (\$2.50 per person, reservation to be made in N.Z.).

Afternoon

Technical Sessions:

Auditorium A:

"The Development of a Simple Mathematical Model for the Agglomeration of Waikato North-Head Iron Sand", by H. Rimmer and P. Wai.

"Electrochemical Processes in Flotation", by Dr. R. Woods.

Auditorium B:

"A Study of the McArthur Lead-Zinc-Silver Deposit", by Dr. N. W. J. Croxford and Miss S. Jephcott.

Afternoon tea

Technical Sessions:

Auditorium A:

"Blending of Coals for Coking", by G. E. Edwards.

"A Detailed Assessment of Concentrator Performance at Broken Hill South Limited", by A. Cameron, D. F. Kelsall, G. J. Restarick and P. S. B. Stewart.

Auditorium B:

"The Mechanization and Development of the New South Wales Coal Industry Over the last Twenty Years", by T. M. Clark.

"Water Supply at the Warrego Mine", by E. Davies and G. Ride.

Evening

Otago School of Mines Centennial and Final Conference Dinner — University Union.

Guest Speaker: Sir Henry Somerset, C.B.E. (By invitation to registered delegates and ladies.)

LADIES' PROGRAMME

Waterloo Quadrant, Auckland (Telephone — 74 770). Conference Enquiry Office — Inter-Continental Hotel, Cnr. Princes Street and

Conference Enquiry Office opens for collection of badges, etc.

A visit to the Te Aroha Racing Club is included in this tour. Pre-Conference Tour — Rotorua (Limited — 120) — \$21.

Conference Enquiry Office opens for collection of badges, etc.

Harbour Cruise.

Inter-Continental Hotel — Ballroom.

Official opening by His Excellency the Governor-General, Sir Arthur Porritt, Bt.,

G.C.M.G., K.C.V.O., C.B.E.

Morning Tea.

by Sir George Grey to man the outer defences of Auckland during the Maori Wars. settled in 1847 by the Royal N.Z. Fencibles, a pensioners' corps raised in England served at Waipuna Lodge, and the tour will return through seaside Howick, strongly fortified by the Maoris, but now set in beautiful parks. Lunch will be The tour will include some of Auckland's volcanic cones, fine viewpoints, once Tour of Auckland.

Guest Speaker: (To be announced.) Chairman: Professor E. A. Rudd. Business Session — Town Hall.

AUCKLAND

.m.q 00.č -.m.s 00.9 Saturday, February 27

.m.q 08.2 -.m.s 00.01 Sunday, February 28

.m.q 00.01-.m.q 00.0

10.00 a.m. Monday, March I

.m.q 05.5 -.m.s 00.11

.m.q 08.8

Tuesday, March 2

10.00 a.m.- 2.00 p.m.

Harbour Cruise on the "Ngaroma".

Cruise on the Waitemata Harbour ("sparkling waters") and the sheltered waters of the Hauraki Gulf. Points of interest will be the Harbour Bridge and some of the islands of the Gulf, especially Auckland's landmark, Rangitoto, an island volcano. Buffet lunch served on board.

6.00 p.m.- 7.30 p.m.

Wine and Cheese Function — Professional Club.

Wednesday, March 3

10.00 a.m.-12.00 p.m.

Tour of the University (10.00 a.m.) and the Art Gallery (11.00 a.m.). Both are within walking distance of the Inter-Continental Hotel.

The University of Auckland is one of six in New Zealand, with more than 9,000 students. The grounds of the University and of the old Government House adjoining are attractively laid out.

The City Art Gallery was the first to be opened in New Zealand, and the Public Library, of which the nucleus was Sir George Grey's famous collection, presented in 1861, shared the building. A large new City Public Library is now nearing completion and the Art Gallery is undergoing extensive alteration and enlargement.

2.00 p.m.- 3.30 p.m.

Tour of the Museum.

The War Memorial Museum (1929) is on a superb site in the Domain (another old volcanic cone) overlooking the Harbour. There are noted collections of Maori material and carvings and of Asian Ceramics. A "Centennial Street" shows Auckland shops of earlier days. Museum publications and souvenirs may be purchased. There is also a coffee lounge.

6.30 p.m.- 8.00 p.m.

Buffet Dinner at the Inter-Continental Hotel. (By invitation to registered delegates and ladies.)

Conference Enquiry Office — Town Hall.

Delegates arrive in Wellington. Enquiry Office opens.

Social Function — Wellington Club, The Terrace. Colf if required.

.m.q 00.8 Afternoon

9.00 a.m. Thursday, March 4

METTINGLON

Colf if required.

(By invitation to registered delegates and ladies.)

9.00 a.m. Friday, March 5

Wellington City and Marine Drive Tour.

.m.q 08.21-00.01

Bay, Happy Valley, Brooklyn and the Terrace. Worser Bay, Seatoun, Pass of Brands, Breaker Bay, Lyall Bay, Island Bay, Ohiro City, the Civic Centre, Oriental Bay, Mt. Victoria, Evans Bay, Point Halswell, A guided tour through Parliament Grounds, the main thoroughfares of Wellington

Packakariki Tour.

.m.q 00.2-00.2

harbour from the hillside suburb of Cashmere. area), Tawa, Glenside, and Khandallah — breathtaking views of Wellington and suburb), Porirua City Shopping Centre, Porirua East (extensive State Housing Packakariki Hill. Return to Wellington is via coastal highway Plimmerton (seaside city within a few years), through farming country and native bush to the top of Pauatahanui (historic rural area destined for development into a self-supporting Via new motorway, Petone, Lower Hutt, over Haywards Hill and through

Or alternatively

Hall and Town Hall, Lower Hutt.

.m.q ()£.4-0£.2

the Rt. Hon. The Prime Minister of New Zealand, to be held at the Horticultural Formal Dinner by invitation to registered senior delegates and ladies, attended by

A visit to the Dominion Museum, Art Gallery, and the Lurnbull Library.

.m.q 08.7

DUNEDIN Conference Enquiry Office -- University of Otago, Department of Mineral Technology. Saturday, March 6 9.00 a.m. Enquiry Office opens. Delegates travel to Dunedin. Afternoon Local Scenic Tours — Short coach tours of Dunedin and environs covering city and University areas and hill suburbs. University of Otago — open. 5.00 p.m. University of Otago Reception (by invitation only). 8.30 p.m. Informal Social Function with entertainment at Glenfalloch Lodge and Gardens. Sunday, March 7 Sightseeing tours, etc. (see General Programme). Evening

Private hospitality for wives of Otago School of Mines Graduates attending Centennial Social Function.

Monday, March 8 Otago Museum.

to the City of Dunedin. architect, Sir Ernest George, and built in 1904, "Olveston" was recently bequeathed collection of art treasures and antique furniture. Designed by the famous British Guided tour of "Olveston". A private Jacobean style home with a world-wide

Buffet Luncheon at the Otago Golf Club, Balmacewan.

Guided tour of "Olveston",

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tour of the departments of Design, Textiles, Clothing, Nutrition and Foods. diplomas in Home Science and Mutrition. Visitors will be taken on a conducted Science is the only educational institution in Australasia offering degrees and A visit to the School of Home Science, University of Otago. The Faculty of Home

gardens, including afternoon tea. A guided tour of the Taieri plains with visits to historical buildings, homes and

second and third preferences should be stated.) (In indicating choice of Tours "B", "C", "D" on the afternoon of March 8, first,

Union. Utago School of Mines Centennial and Final Conference Dinner - University

(By invitation to registered delegates and ladies.) Guest Speaker: Sir Henry Somerset, C.B.E.

.m.a 05.11-.m.a 05.01

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Tour B m.q 00.2 -.m.q 00.21

2.00 p.m.- 3.30 p.m.

.m.q 24.5 -.m.q 00.2 Tour

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.m.q 00.2 -.m.q 00.2

Evening

POST-CONFERENCE TOURS

Conference concludes, Delegates commence post-Conference tours.

Arrangements should be made with the New Zealand Government Tourist Bureau offices in Melbourne, Sydney and Brisbane as soon as possible as March is a peak tourist month for resorts such as Mt. Cook, Queenstown, Milford Sound and Manapouri.

Tourist Bureau office addresses are:-

Melbourne CML Building, 93-95 Elizabeth Street,

Melbourne, Vic. 3000.

Sydney 14 Martin Place,

Sydney, N.S.W. 2000.

Brisbane MLC Building, Adelaide Street,

Brisbane, Qld. 4000.

be confirmed before end of January. the enclosed form and return to Head Office of The Institute. All ticketing must bookings. Delegates wishing to take advantage of this arrangement should fill in Ansett Airlines of Australia have agreed to assist delegates who wish to make air

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The rates vary from \$5.00 to \$14.00 (room only). Block bookings have been made by The Institute in New Zealand hotels and motels.

each centre (Auckland, Wellington, Dunedin) accompanying the Registration Fee Visiting delegates and ladies are required to pay a deposit of \$10.00 per person for

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Questionnaire and described in the Appendix. Costs, including transport, payable STISIV Technical visits for male senior delegates and students will be made as shown in the

and Cover Charges and to pay the balance directly to the hotels.

costs together with Registration Fee.

together with the Registration Fee.

TECHNICAL

Programme. Please indicate which of the visits you will participate in and forward Visits by ladies will be made as listed in the Questionnaire and described in the

PROGRAMME 'S3IGAJ

REGISTRATION

It is necessary for all members, non-members and ladies who propose to participate to register formally, by completing the Registration Form and forwarding to Head Office of The Institute not later than **January 15**, 1971, accompanied by remittance to cover registration fees, cover charges, costs of technical visits and accommodation deposit.

Registration Fees are as follows:-

(a)	Visiting Delegates —								
, .	Institute members						\$30.00		
	Non-members						\$40.00		
	Ladies						\$15.00		
	Students						\$10.00		
(b)	New Zealand Delegates —								
	Institute members				\$30.00				
	Non-members						\$40.00		
	Ladies						\$10.00		

COVER CHARGES

Includes all costs of social functions —

Students

- (a) Auckland —
 Visiting Senior Delegates and Ladies \$18.00 per person Residents as arranged*.
- (b) Wellington Visiting Senior Delegates and Ladies \$22.00 per person Residents as arranged*.
- (c) Dunedin Visiting Sēnior Delegates and Ladies \$12.00 per person Residents as arranged*.
 - * Charges for individual functions will be paid to local committees.

Students — Visiting and Local.

Cover charges will be advised at a later date for Students.

\$10.00

APPENDIX - DETAILS OF VISITS

Pre-Conference Tour — Rotorua (Limit — 120) —

Departs Auckland Saturday, February 27, returning Sunday, February 28. A visit to the Te Aroha Racing Club is included in this tour.

— Pacific Steel Limited —

COST: \$21.

Inspection of Kochs Rod Mill.

New Zealand Steel Limited —

Main Plant (Ladies are not allowed to visit the Main Plant) — Inspection of iron sand blending, pelletising, Lurgi kiln, electric are furnaces and Con-cast machine. Inspection of galvanising plant.

— site aniM

Inspection of concentration plant. Bus trip to mining area, and through adjacent forestry to coastal look-out. Demonstration of forestry techniques by Forest Service. The tour of these two companies will be of approximately 8 hours duration.

Cost: \$6.00.

TOUR B Auckland Volcanoes (Morning tour) —

This tour provides excellent views of Auckland as well as examples of craters, tuff rings, scoria cones, fire pits, a buried forest and a large quarry (Winstones Limited).

Duration of this tour is approximately $3\frac{1}{2}$ hours. Cost: \$1.00.

TOUR C Auckland Volcanoes and Crown Lynn Potteries —

This tour will cover the same ground as Tour B plus a visit to Crown Lynn Potteries after lunch, where a variety of clay processing operations will be seen. The duration of these two visits will be approximately 7 hours. Cost: \$3.50.

TOUR D Coromandel Geology and Mining —

This tour is primarily of geological interest in particular, Coromandel type rocks and hydrothermal alteration, with visits to the Tui lead-zinc mine of Norpac Mining Limited near Te Aroha and the silver mine of the Consolidated Silver Mining Company at Maratoto.

The duration of this tour will be approximately 10 hours. Cost: \$7.00.

TOUR E 3-Day Tour of Tui Mine — Rotorua — Taupo — Wellington —

(Arrival in Wellington, 5 p.m., Thursday, 4th March.)

Inclusive Cost: \$50.00 (Lakeside Hotel, Taupo), \$55.00 (Wairakei Hotel).

Tuesday, March 2nd:

Travel south from Auckland calling at the Tui lead-zinc mine and mill of Norpac Mining Limited and then to Rotorua either via Owharoa ignimbrite quarry, Waihi, Tauranga or via the Mamaku Plateau. Visit Whakarewarewa thermal area and Maori Arts Centre. About 200 miles. Stay overnight at the Caravelle Motel, Rotorua.

Wednesday, March 3rd:

Travel from Rotorua to Wairakei via the geothermal areas of Broadlands (sulphide mineralisation) and the Wairakei geothermal power area. Visit Aratiatia on the Waikato River, Lake Rotokaua sulphur, Kaiapo Bay faulting. Stay overnight at the Wairakei Hotel or the Lakeside Hotel, Taupo. About 100 miles.

Thursday, March 4th:

Travel to Wellington (about 250 miles) round Lake Taupo via Turangi hydroconstruction and Desert Road past volcanoes — Mt. Ruapehu, Ngaruhoe and Tongariro. Arrive Wellington at 5 p.m.

Incoming mail should be addressed to the delegate at the following information centres for re-distribution —

Auckland

Wellington

C/- Wilberfoss & Company (Telephone 70 566), Autora House, Mayfair Centre, 48-64 The Terrace, 48-64 The Terrace, well-arm of the Terrace, The Terrace of Terrace of Terrace, The Terrace of Terrace of Terrace, The Terrace of Terrace of Terrace of Terrace, The Terrace of Terrace of Terrace of Terrace, The Terrace of Terrace o

Dunedin

C/- Associate Professor M. H. Buckenham (Telephone 79 561), Department of Mineral Technology, University of Otago,

Outgoing mail will be through the normal postal channels by the delegates themselves.

B. E. JACKA,

N.B.: Included with the circular is Registration Form and Air Reservation Form. The closing date for registration is January 15, 1971.



